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REMARKS

This is a full and timely response to the non-final Official Action mailed **March 18, 2008** (the "Office Action" or "Action"). Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

Claim Status:

By the forgoing amendment, claims 1, 3, 13, 15, 18, 25, and 33 have been amended. No additional claims are added or cancelled. Claims 29, 34 and 35 were cancelled by previous amendment without prejudice or disclaimer. Thus, claims 1-28 and 30-33 are currently pending for further action.

35 U.S.C. § 101:

In the recent Office Action, claims 13-32 were rejected under 35 U.S.C. § 101. These claims have been carefully reviewed in light of the Examiner's comments.

Claim 13 was rejected for reciting an "apparatus" that was interpreted by the Examiner as "a computer program, software, or listing per se" and for failing to recite the "apparatus" as stored on an appropriate computer readable medium to define "structural and functional interrelationships between the software and other components of a computer that permit the software's functionality to be realized" (Action, p. 2-3). Claims 14-24 were also rejected as non-statutory for mirroring the alleged deficiencies of claim 13.

While Applicant does not necessarily agree that any of these claims were non-statutory subject matter as filed, claims 13-24 have been amended herein to address the issues raised by the Examiner under 35 U.S.C. § 101.

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Claim 13 now recites:

An apparatus for translating binary code instructions from a source format to a target format for processing by a target processor, the apparatus comprising:
at least one processor configured to execute code embodied on a computer readable medium;
an instruction identifier *embodied within said code* for identifying a source instruction;
a template selector *embodied within said code* for selecting a translation template corresponding to said identified source instruction, said translation template comprising a set of target instructions semantically equivalent to said identified source instruction and further comprising input and output resources; and
a translator *embodied within said code* for translating said identified source instruction, wherein said translator is configured to
convert said source instruction into a source intermediate data structure having a plurality of members;
map said members in said source intermediate data structure to corresponding members in a target intermediate data structure according to said template; and
convert said target intermediate data structure into a target instruction; and
an output buffer *embodied within said code* for outputting said target instruction for processing by said target processor.

Support for the amendment to claim 13 can be found in Applicant's originally filed specification at, for example, lines 22-24 of page 9, lines 1-5 of page 10, lines 26-31 of page 14, and line 1 of page 10 through line 16 of page 12.

Claim 13 now recites an apparatus having "at least one processor" that is configured to "execute code embodied on a computer readable medium." The instruction identifier, template selector, translator, and output buffer are all "embodied within said code" that the processor is "configured to execute" (claim 13). Thus, the apparatus of claim 13 is now recited as stored on an appropriate computer readable medium, which according to MPEP 2106.01 (I) and the Examiner (Action p. 2-3), defines structural and functional interrelationships between the software and other components of a computer that permit the software's functionality to be realized and is statutory material. Claims 14-24 are dependent

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from claim 13, and are therefore also believed to be statutory for the same reasons outlined with respect to claim 13. It is therefore believed that claims 13-24 are in compliance with 35 U.S.C. § 101 and notice to that effect is respectfully requested.

Claim 25 was rejected as non-statutory for reciting a "computer-readable medium" that according to the Office Action appeared intended to include "transmission means," in light of lines 18-20 of page 18 of the specification as originally filed by the Applicant, which the Examiner interprets to include a signal (Action, p. 3). The Office Action further asserts that as a form of energy, a signal does not fall within one of the four statutory classes of 35 U.S.C. § 101 (Action, p. 3). Claims 26-32 were also rejected as non-statutory using the same reasoning as was applied with respect to claim 25.

In their entirety, lines 18-20 on page 18 of Applicant's specification read verbatim as follows: "Furthermore, any or all of the software used to implement the invention can be communicated via various transmission or storage means such as computer network, floppy disc, CD-ROM or magnetic tape so that the software can be loaded onto one or more devices." With respect to these lines, Applicant is confused by the Examiner's erroneous assertion that hardware such as a "computer readable medium" (claim 25) (Action, p. 3) should be interpreted according to language that is clearly referring only to "software" (specification, p. 3, line 18). A computer readable medium is observably not software, but rather the physical means by which software or other stored data may be read by a computer. Thus, the "transmission means" (specification, p. 3, line 19) described by the Applicant as a possible implementation of communicating "software" (specification, p. 3, lines 18-19) is obviously not specifically referring to the claimed "computer readable medium" (claim 25).

Moreover, the Action is similarly perplexing in its suggestion that a "transmission means" is an inherent component or characteristic of something by virtue of the fact that it

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"*can be communicated*" by a "transmission means" (specification, p. 3, line 19). If one were

to assume that such a transmission means did indeed refer to a signal, as proposed by the

Examiner, by similar logic a modulated RF signal would be an inherent component of a

cellular telephone, which is obviously not the case. As demonstrated here, the Examiner has

failed to show that the "computer readable medium" of claim 25 includes or intends to

include a signal, and therefore does not attempt to claim the non-statutory material cited in

the Office Action (Action, p. 3). By the same reasoning, claims 26-32 are shown to not

attempt to claim non-statutory material cited in the Office Action (Action, p. 3). Therefore,

for at least the reasons explained here, the rejection of claims 26-32 based on 35 U.S.C. § 101

should be reconsidered and withdrawn.

Prior Art:

Claims 1-5, 7-17, 19-28, and 30-33 were rejected as unpatentable under 35 U.S.C. §

103(a) over the combined teachings of US Patent No. 6,075,937 to Scalzi et al. ("Scalzi") and

US Patent No. 5,560,028 to Sachs et al. ("Sachs").

Claim 1:

Claim 1 now recites:

> A method of translating binary code instructions from a source format to a
> target format for processing by a target processor, said method comprising the steps
> of:
> identifying a source instruction;
> selecting a translation template corresponding to said identified source
> instruction, said template providing a set of target instructions semantically equivalent
> to said identified source instruction;
> translating said identified source instruction in accordance with said template,
> wherein said translating comprises:
> *converting said source instruction into a source intermediate data*
> *structure having a plurality of members;*

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> *mapping said members in said source intermediate data structure to corresponding members in a target intermediate data structure according to said template; and*
>
> *converting said target intermediate data structure into a target instruction; and*
>
> outputting said translated target instruction for processing by said target processor.
> (Emphasis added.)

Support for the amendment to claim 1 can be found in Applicant's originally filed specification at, for example, page 10, line 1 through page 12, line 16. Applicant notes that the method of claim 1 calls for the affirmative conversion of a source instruction into an "intermediate data structure having a plurality of members." These members are then mapped to "corresponding members in a target intermediate data structure according to said template," and the target intermediate data structure is converted "into a target instruction."

Under the analysis required by *Graham v. John Deere*, 383 U.S. 1 (1966) to support a rejection under § 103, the scope and content of the prior art must first be determined. Then, an assessment is made of the differences between the prior art and the claim at issue in view of the ordinary skill in the art.

As cited by the Examiner in the present case, Scalzi teaches that an asynchronous emulation processor (AEP) "interprets each incompatible processor instruction" (column 6, lines 9-10), "looks up the address of a corresponding target processor template routine (template)" (column 6, lines 10-11) that "includes target instructions which perform the functions of the incompatible instruction, as specified in the incompatible architecture definition" (column 12, lines 18-21), "processes the target instructions in the template to find any patch instruction(s), which the AEP executes against an associated target instruction in the template" (column 6, lines 11-14), and "passes each target instruction... to a Target

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Instruction Queue, from which a target processor obtains the instructions in a sequence for execution when operating in emulation mode" (column 6, lines 14-17).

As also cited by the Examiner, Sachs teaches that a "three bit program counter PC points to one of the instructions in the frame, in combination with the set of 8 group identification bits for the frame, indicating the group affiliation of each instruction" (column 11, lines 3-6) wherein each "group of instructions" is "addressed" (column 11, lines 22-25), and groups of instructions that "must be capable of simultaneous execution; e.g., there cannot be data dependency between instructions" (column 5., lines 10-13, 21-23).

Neither of these references teach or suggest many of the steps of recited in claim 1. Specifically, neither reference teaches or suggests "converting a source instruction into an intermediate source data structure having a plurality of members," mapping the members of the intermediate source data structure to "corresponding members in a target intermediate data structure according to said template," or "converting said target intermediate data structure into a target instruction."

Consequently, the recent Office Action does not accurately identify the very significant difference between the cited prior art and the claimed subject matter. Moreover, these differences are significant in that the claimed method provides a useful technique that is not available in the cited prior art. Therefore, as demonstrated here, the cited prior art will not support a rejection of claim 1 under 35 U.S.C. § 103 and *Graham*. Consequently, for at least the reasons explained here, the rejection based on Sachs and Scalzi of claim 1 and its dependent claims should be reconsidered and withdrawn.

Claim 13:

Claim 13 now recites:

A method of translating binary code instructions from a source format to a target An apparatus for translating binary code instructions from a source format to a target format for processing by a target processor, the apparatus comprising:
at least one processor configured to execute code embodied on a computer readable medium;
an instruction identifier embodied within said code for identifying a source instruction;
a template selector embodied within said code for selecting a translation template corresponding to said identified source instruction, said translation template comprising a set of target instructions semantically equivalent to said identified source instruction and further comprising input and output resources; and
a translator embodied within said code for translating said identified source instruction, wherein said translator is configured to
convert said source instruction into a source intermediate data structure having a plurality of members;
map said members in said source intermediate data structure to corresponding members in a target intermediate data structure according to said template; and
convert said target intermediate data structure into a target instruction; and
an output buffer embodied within said code for outputting said target instruction for processing by said target processor.
(Emphasis added.)

Support for the amendment to claim 13 can be found in Applicant's originally filed specification at, for example, lines 22-24 of page 9, lines 1-5 of page 10, lines 26-31 of page 14, and line 1 of page 10 through line 16 of page 12.

With regard to claim 13, the Action cites the same portions of Scalzi and Sachs and uses the same reasoning as was used to reject claim 1. However, as demonstrated above, these citations do not demonstrate that the cited prior art taught or suggested the claimed apparatus having a translator configured to "convert said source instruction into a source intermediate data structure having a plurality of members," "map said members in said source intermediate data structure to corresponding members in a target intermediate data structure

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according to said template," and "convert said target intermediate data structure into a target instruction" (claim 13).

As above, the recent Office Action does not accurately identify the very significant difference between the cited prior art and the claimed subject matter of claim 13. Moreover, these differences are significant in that the claimed apparatus is not available in the cited prior art. Consequently, for at least the reasons demonstrated here, the cited prior art will not support a rejection of claim 13 under 35 U.S.C. § 103 and *Graham*. Therefore, the rejection based on Sachs and Scalzi of claim 13 and its dependent claims should be reconsidered and withdrawn.

Claim 25:

Claim 25 now recites:

> A computer program product for translating binary code instructions from a source format to a target format for processing by a target processor, comprising a computer-readable medium, further comprising:
> a template embodied within said computer-readable medium for use in a binary code translator for translating binary code instructions from a source format to a target format for processing by a target processor, the template comprising:
> a template identifier for uniquely associating said template to a source instruction;
> a set of target instructions in a target format semantically equivalent to the source instruction;
> *computer usable program code embodied within said computer-readable medium configured to convert said source instruction into a source intermediate data structure having a plurality of members;*
> *computer usable program code embodied within said computer-readable medium configured to map said members in said source intermediate data structure to corresponding members in a target intermediate data structure according to said template; and*
> *computer usable program code embodied within said computer-readable medium configured to convert said target intermediate data structure into a target instruction.*
> (Emphasis added.)

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Support for the amendment to claim 13 can be found in Applicant's originally filed specification at, for example, lines 22-24 of page 9, lines 1-5 of page 10, lines 26-31 of page 14, and line 1 of page 10 through line 16 of page 12.

With regard to claim 25, the Action cites the same portions of Scalzi and Sachs and uses the same reasoning as was used to reject claim 1. However, as demonstrated above, these citations do not demonstrate that the cited prior art taught or suggested the claimed "computer usable program code embodied within said computer-readable medium configured to convert said source instruction into a source intermediate data structure having a plurality of members," "computer usable program code embodied within said computer-readable medium configured to map said members in said source intermediate data structure to corresponding members in a target intermediate data structure according to said template," and "computer usable program code embodied within said computer-readable medium configured to convert said target intermediate data structure into a target instruction" (claim 25).

As above, the recent Office Action does not accurately identify the very significant difference between the cited prior art and the claimed subject matter of claim 25. Moreover, these differences are significant in that the claimed apparatus is not available in the cited prior art. Consequently, for at least the reasons demonstrated here, the cited prior art will not support a rejection of claim 25 under 35 U.S.C. § 103 and *Graham*. Therefore, the rejection based on Sachs and Scalzi of claim 25 and its dependent claims should be reconsidered and withdrawn.

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<u>Claim 33:</u>

Claim 33 now recites:

A computer program product for translating binary code instructions from a source format to a target format for processing by a target processor, comprising:
a computer-readable medium, comprising:
a first set of codes for causing a computer to identify a source instruction;
a second set of codes for causing a computer to select a translation template corresponding to said identified source instruction, said template providing a set of target format instructions semantically equivalent to said identified source instruction;
a third set of codes for causing a computer to translate said identified source instruction in accordance with said template by converting said identified source instruction to an intermediate source data structure, mapping members of said intermediate source data structure to a members of a target intermediate data structure according to said template, and converting said target intermediate data structure into a target instruction; and
a fourth set of codes for causing a computer to output said translated instruction for processing by said target processor.
(Emphasis added.)

Support for the amendment to claim 33 can be found in Applicant's originally filed specification at, for example, lines 22-24 of page 9, lines 1-5 of page 10, lines 26-31 of page 14, and line 1 of page 10 through line 16 of page 12.

With regard to claim 33, the Action cites the same portions of Scalzi and Sachs and uses the same reasoning as was used to reject claim 1. However, as demonstrated above, these citations do not demonstrate that the cited prior art taught or suggested the claimed "third set of codes for causing a computer to translate said identified source instruction in accordance with said template by converting said identified source instruction to an intermediate source data structure, mapping members of said intermediate source data structure to a members of a target intermediate data structure according to said template, and converting said target intermediate data structure into a target instruction" (claim 33).

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As above, the recent Office Action does not accurately identify the very significant difference between the cited prior art and the claimed subject matter of claim 33. Moreover, these differences are significant in that the claimed apparatus is not available in the cited prior art. Consequently, for at least the reasons demonstrated here, the cited prior art will not support a rejection of claim 33 under 35 U.S.C. § 103 and *Graham*. Therefore, the rejection based on Sachs and Scalzi of claim 33 and its dependent claims should be reconsidered and withdrawn.

Additionally, various dependent claims of the application recite subject matter that is further patentable over the cited prior art. Specific, non-exclusive examples follow.

Claims 6 and 18:

Claims 6 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Scalzi, Sachs, and US Patent No. 5,828,884 to Lee ("Lee"). The rejection of these claims should be reconsidered and withdrawn for at least the same reasons given above in favor of the patentability of independent claims 1 and 13, from which claims 6 and 18 respectively depend.

Moreover, Lee is cited for a teaching of a "method for compiling a software program and executing the program on a system that converts data between little endian and big endian formats" (Lee, Abstract) (Action, p. 15). In contrast, the cited Lee references fail to teach or suggest any of the steps of "converting a source instruction into an intermediate source data structure having a plurality of members," mapping the members of the intermediate source data structure to "corresponding members in a target intermediate data structure according to said template," or "converting said target intermediate data structure into a target instruction"

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that are claimed in claim 6. Similarly, the cited portions of Lee fail to teach or suggest the claimed apparatus having a translator configured to "convert said source instruction into a source intermediate data structure having a plurality of members," "map said members in said source intermediate data structure to corresponding members in a target intermediate data structure according to said template," and "convert said target intermediate data structure into a target instruction" that is claimed in claim 18.

Therefore, as demonstrated here, the recent Office Action does not accurately identify the very significant difference between the cited prior art and the claimed subject matter of claims 6 and 18. Moreover, these differences are significant in that the claimed subject matter is not available in the cited prior art. Consequently, for at least the reasons demonstrated here, the cited prior art will not support a rejection of claims 6 and 18 under 35 U.S.C. § 103 and *Graham*. Therefore, the rejection of claims 6 and 18 should be reconsidered and withdrawn.

Conclusion:

In view of the foregoing arguments, all claims are believed to be in condition for allowance over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed.

The absence of a reply to a specific rejection, issue or comment in the Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally,

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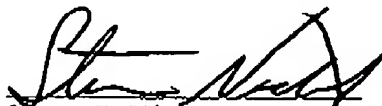200400479-2   10/827,523

nothing in this paper should be construed as an intent to concede any issue with regard to any

claim, except as specifically stated in this paper, and the amendment of any claim does not

necessarily signify concession of unpatentability of the claim prior to its amendment. Further,

for any instances in which the Examiner took Official Notice in the Office Action, Applicants

expressly do not acquiesce to the taking of Official Notice, and respectfully request that the

Examiner provide an affidavit to support the Official Notice taken in the next Office Action,

as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

If the Examiner has any comments or suggestions which could place this application

in better form, the Examiner is requested to telephone the undersigned attorney at the number

listed below.

Respectfully submitted,

DATE: June 18, 2008

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